

# 12

## **Lesson 12 Formatting Tables**

### **Lesson Topics**

- ▶ Advanced Table Formatting
- ▶ Cell Spanning
- ▶ Rules & Frames
- ▶ Lesson 12 Summary

## Advanced Table Formatting

In Lesson 4: *Introduction to Tables*, you learned how to script and apply tables to Web pages. You even learned some advanced features, such as adding color to table cells and alignment of data within cells. In this Lesson, you will learn how to apply advanced formatting to tables, including:

- spanning cells across columns;
- spanning columns across rows;
- combining row and column spanning;
- formatting cell rules and frames (collectively called gridlines).

### Review of Formatting Attributes

As you know, two table attributes, `CELLPADDING` and `CELLSPACING`, allow you to substantially change the appearance of a table. These attributes are compared in Figure 12-1.

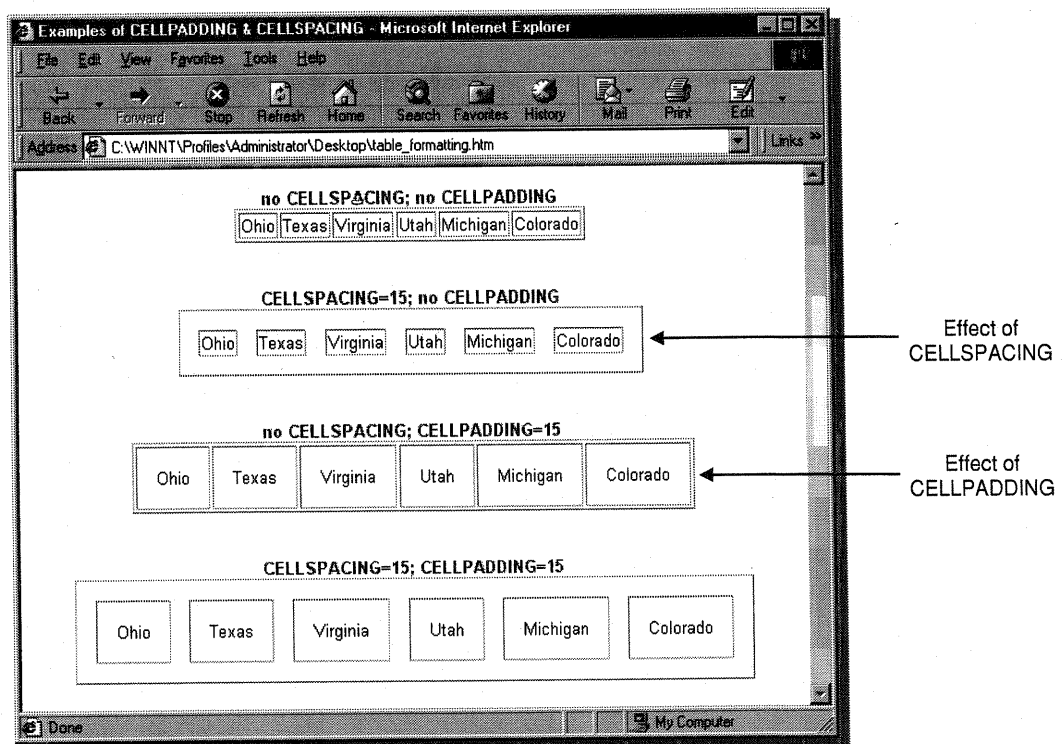


Figure 12-1: Same table with different `CELLPADDING` and `CELLSPACING` values



The default of a table is to display no border. The tables in this example were all given a default `BORDER` attribute (equal to 2-3 pixels in most browsers).

## Table Tags & Attributes

Table 12-1 lists the most important and widely used table tags.

Tag	Attribute	Attribute Values	Comment
<TABLE>	BORDER	number (pixels)	Default is no border. This attribute can be used with no value (most browsers will use a 2-3 pixel border).
<TABLE>	BORDERCOLOR	RGB code or English color name	An HTML extension. Navigator displays the outside border in color; IE displays the border and all gridlines in color.
<TABLE>	RULES	none, groups, rows, cols, all	New to HTML 4.0. In IE 4.0, if you combine BORDER=x with RULES=none, you can achieve a unique effect.
<TABLE>	ALIGN	left, right, center	Default is left justification.
<TABLE>	WIDTH	number (pixels) or % (of browser window)	Default is columns that are wide enough to accommodate text or image data.
<TABLE>	CELLPADDING	number (pixels)	Adds space <i>inside</i> cells.
<TABLE>	CELLSPACING	number (pixels)	Adds space <i>between</i> cells (by making gridlines thicker).
<TR>	ALIGN	left, right, justify	Aligns the content of each cell within the row; this is more economical than placing ALIGN attributes in all <TD> tags.
<TR>	VALIGN	top, middle, bottom	If you add a large amount of CELLSPACING, use <TR VALIGN=middle>.
<TD>	ROWSPAN	number (of rows to span)	N/A
<TD>	COLSPAN	number (of columns to span)	N/A
<TD>, <TR>	BGCOLOR	RGB code or English color name	Fill color for cell or row.
<CAPTION>	ALIGN	top, bottom, left, right	Indicates where the caption is located <i>relative to the table</i> .

**Table 12-1: HTML 4.0 table tags, attributes, and attribute values**

## Exercise 12-1: Reviewing Table Formatting

In this exercise, you will create a simple table and manipulate its formatting.

1. Toggle over to your Web browser.
2. Open TABLE\_REVIEW.HTM from the HTML-2 folder.



The page is downloaded and displayed, as shown in Figure 12-2. The table has no formatting; it is only plain <TD> and <TR> tags.

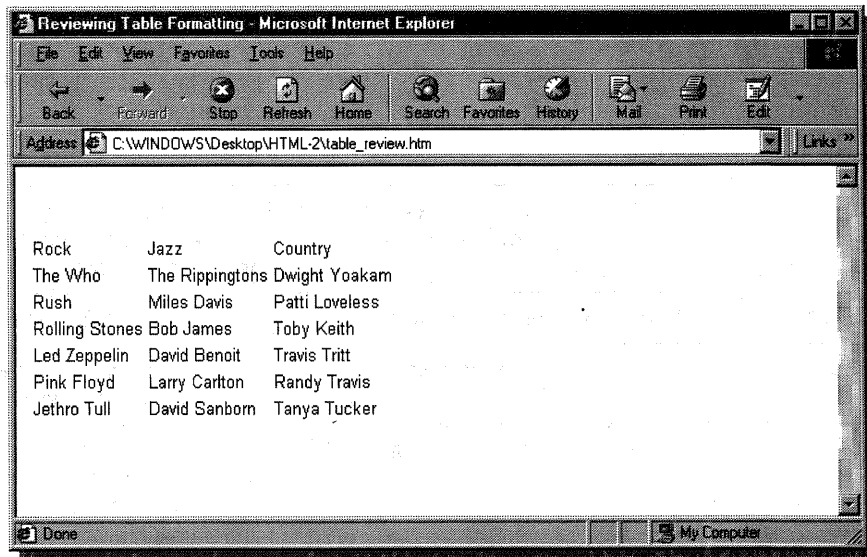


Figure 12-2: Table with no formatting

3. Toggle over to Notepad.
4. Open TABLE\_REVIEW.HTM from the HTML-2 folder.
5. Center the table and add a border. Give the border a thickness of your choice.
6. Increase the space inside the cells.
7. Vertically center the text inside the cells.
8. Make the header row text larger and bold. Make the header cells navy and the text white.
9. Horizontally center the text in every cell.
10. Increase the thickness of the gridlines for the entire table.
11. Make the text "Rolling Stones" a hyperlink that refers to [www.stones.com](http://www.stones.com).
12. Make the text "The Rippingtons" a hyperlink that refers to [www.rippingtons.com](http://www.rippingtons.com).

13. Make the text “Randy Travis” a hyperlink that refers to [www.randy-travis.com](http://www.randy-travis.com).
14. Make every cell except the header row have a fill color of gray.
15. The text in the header row is already bold and white; make the text in the other row cells bold and white but do not change the font size. When you are finished, your table should appear similar to Figure 12-3.

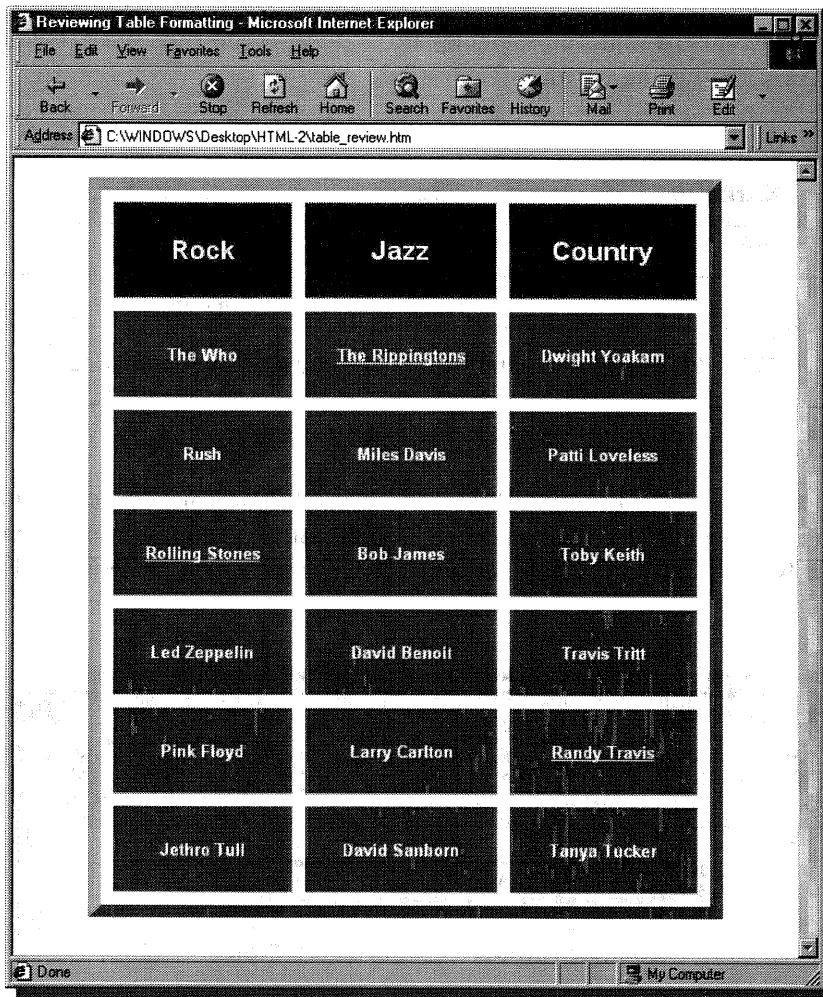


Figure 12-3: How your table should appear when you are finished



This is the level of proficiency that you should have before completing the remainder of this Lesson. If you do not feel confident in your ability to create richly formatted tables like the one above, you should return to Lesson 4: *Introduction to Tables*, and spend more time formatting tables.

## Cell Spanning

One of the easiest ways to create sophisticated table layouts is to merge rows and columns. Officially called *spanning* (because a cell must be *spanned*, or stretched, over a specific number of columns or rows), this allows you to create asymmetrical tables that accommodate images, graphics, or large blocks of data.

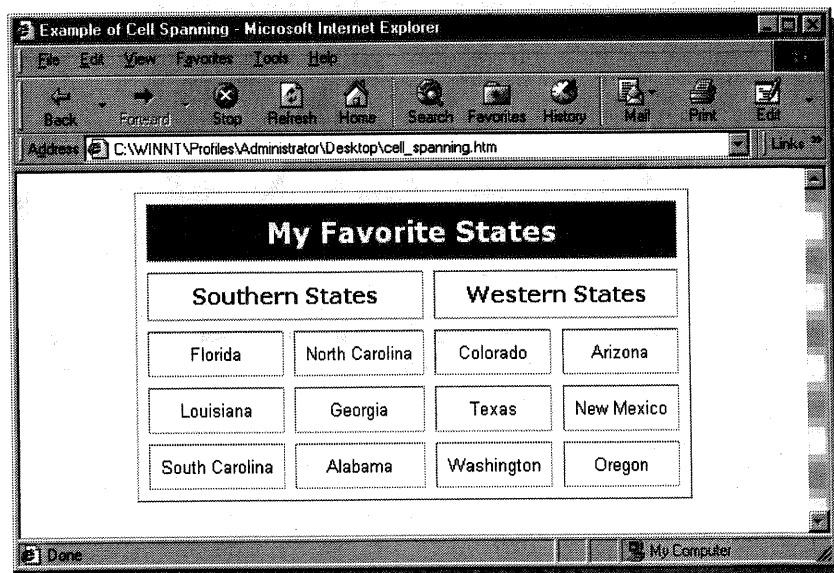
Cell spanning can also be used to create decorative header rows or header columns.

The two attributes involved in cell spanning are COLSPAN and ROWSPAN, both of which work with the <TD> tag, as shown in Table 12-2.

Attribute	Tag	Value
COLSPAN	<TD>	number (of cells)
ROWSPAN	<TD>	number (of cells)

**Table 12-2: COLSPAN and ROWSPAN attribute characteristics**

Cell spanning—when used in conjunction with other attributes, such as text formatting and cell coloring—can enhance a table, improve its appearance, and make it much easier for a user to quickly comprehend the significance of the data presented, as shown in Figure 12-4.



**Figure 12-4: Examples of cell spanning**

## Exercise 12-2: Spanning Cells Across Columns

In this exercise, you will span cells across columns using the COLSPAN attribute in the <TD> tag.

1. Toggle over to Notepad. Open a new document.
2. Type the following script:

```
<HTML>

<HEAD>
<TITLE>Cell Spanning</TITLE>
</HEAD>

<BODY>

<P><BR><P>

<CENTER>

<TABLE BORDER CELLSPACING=5 CELLPADDING=10>

<TR>
<TD ALIGN=center BGCOLOR=navy COLSPAN=4><FONT SIZE=+2
COLOR=white><B>Cities of the World</B></FONT></TD>
</TR>

<TR>
<TD ALIGN=center BGCOLOR=yellow COLSPAN=2><B><FONT SIZE=+1
COLOR=navy>American Cities</FONT></B>
<TD ALIGN=center BGCOLOR=yellow COLSPAN=2><B><FONT SIZE=+1
COLOR=navy>European Cities</FONT></B>
</TR>

<TR ALIGN=center>
<TD><B>Seattle</B>
<TD><B>Cleveland</B>
<TD><B>London</B>
<TD><B>Paris</B>
</TR>

<TR ALIGN=center>
<TD><B>Houston</B>
<TD><B>Boston</B>
<TD><B>Geneva</B>
<TD><B>Madrid</B>
</TR>

<TR ALIGN=center>
<TD><B>Chicago</B>
<TD><B>Atlanta</B>
```

```

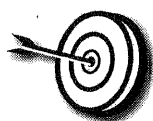
<TD><B>Brussels</B>
<TD><B>Munich</B>

</TABLE>
</CENTER>

</BODY>
</HTML>

```

3. Save the document as CELL\_SPANNING.HTM in the HTML-2 folder.
4. Toggle over to your Web browser.
5. Open CELL\_SPANNING.HTM from the HTML-2 folder.



The page is downloaded and displayed, as shown in Figure 12-5.

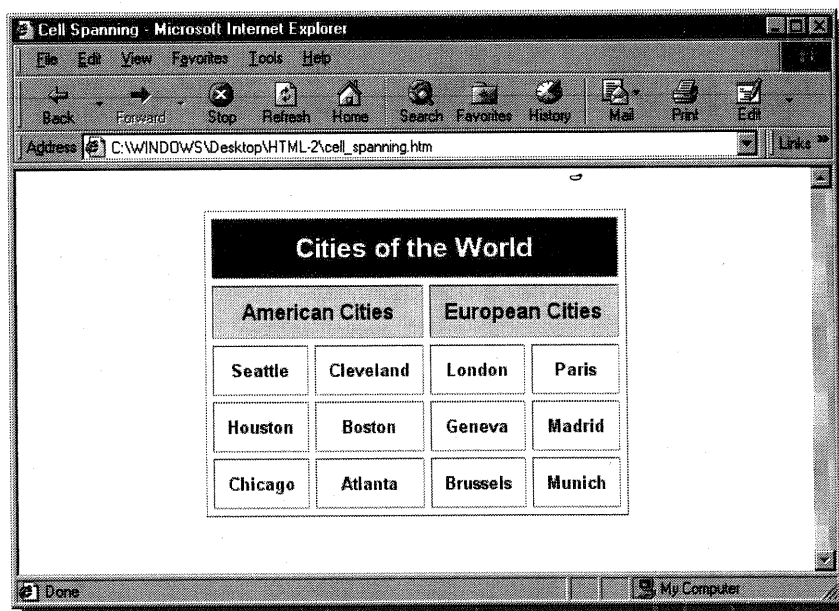


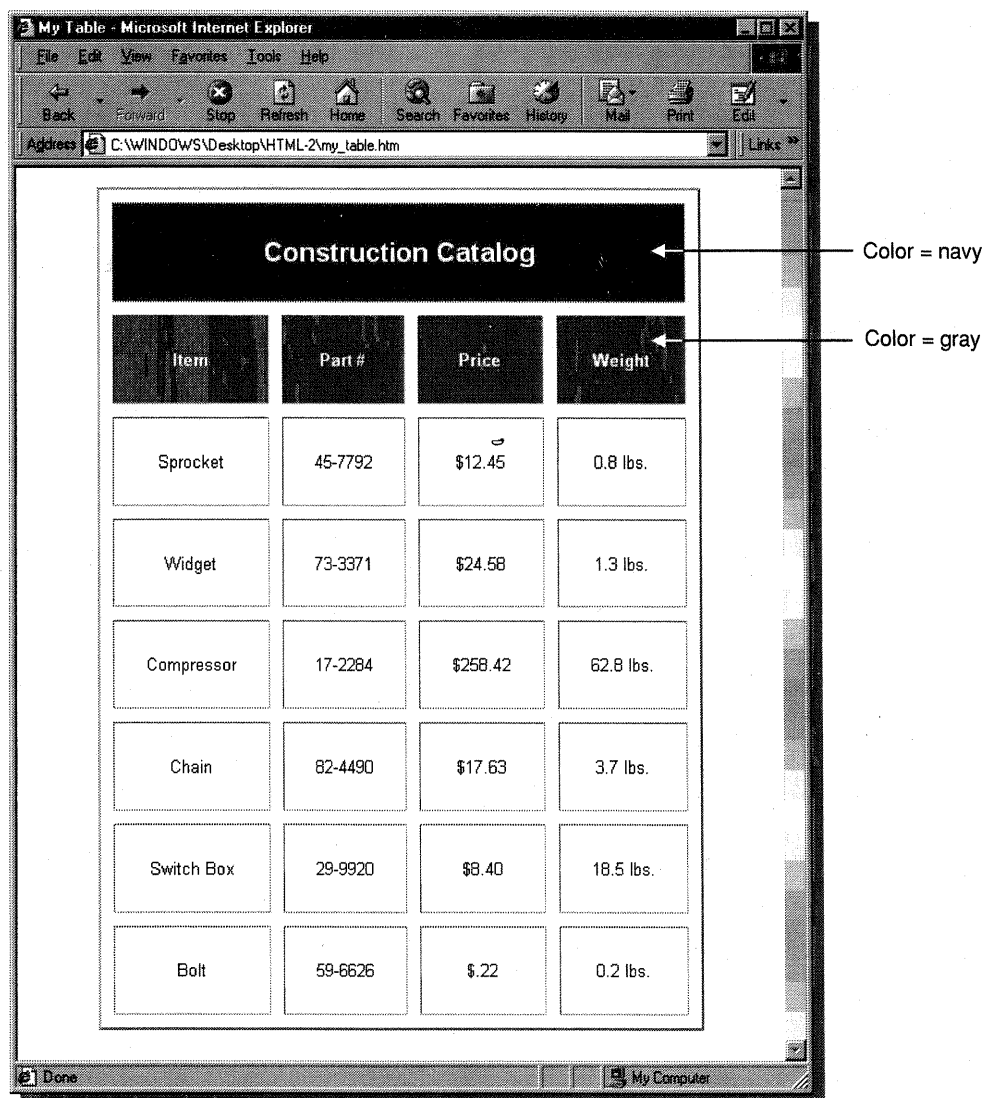
Figure 12-5: Cells spanned over columns



### Exercise 12-3: Building a Table from Scratch

In this exercise, you will create a table to match a model presented to you. You should be able to complete this exercise with no difficulties. If you have problems completing this exercise, review Lesson 4: *Introduction to Tables* prior to completing the remaining sections of this Lesson.

1. In Notepad, open a new document.
2. Script a table that matches the one shown in Figure 12-6. Note the alignment of cell data, the formatting of tables rules, and the colors used.



Color = navy

Color = gray

Construction Catalog			
Item	Part #	Price	Weight
Sprocket	45-7792	\$12.45	0.8 lbs.
Widget	73-3371	\$24.58	1.3 lbs.
Compressor	17-2284	\$258.42	62.8 lbs.
Chain	82-4490	\$17.63	3.7 lbs.
Switch Box	29-9920	\$8.40	18.5 lbs.
Bolt	59-6626	\$.22	0.2 lbs.

Figure 12-6: Build this table on your own

## Exercise 12-4: Spanning Cells Across Rows

In this exercise, you will span cells across rows using the ROWSPAN attribute in the <TD> tag.

1. Toggle over to Notepad. Open a new document.
2. Type the following script:

```
<HTML>
<HEAD>
<TITLE>Cell Spanning</TITLE>
</HEAD>
<BODY>
<P><BR><P>
<CENTER>
<TABLE BORDER CELSPACING=5 CELLPADDING=10>
<TR>
<TD ALIGN=center BGCOLOR=navy COLSPAN=2><FONT SIZE=+2
COLOR=white><B>My Exercise Log</B></FONT>
</TR>
<TR>
<TD ALIGN=center BGCOLOR=yellow ROWSPAN=2><B><FONT SIZE=+1
COLOR=navy>Week 1</FONT></B>
<TD><B>Ran 12 miles</B>
</TR>
<TR>
<TD><B>Biked 25 miles</B>
</TR>
<TR>
<TD ALIGN=center BGCOLOR=yellow ROWSPAN=2><B><FONT SIZE=+1
COLOR=navy>Week 2</FONT></B>
<TD><B>Ran 16 miles</B>
</TR>
<TR>
<TD><B>Biked 32 miles</B>
</TR>
```

```

<TR>
<TD ALIGN=center BGCOLOR=yellow ROWSPAN=3><B><FONT SIZE=+1
COLOR=navy>Week 3</FONT></B>
<TD><B>Ran 17 miles</B>
</TR>

<TR>
<TD><B>Biked 34 miles</B>
</TR>

<TR>
<TD><B>Swam 2 miles</B>
</TR>

<TR>
<TD ALIGN=center BGCOLOR=yellow ROWSPAN=4><B><FONT SIZE=+1
COLOR=navy>Week 4</FONT></B>
<TD><B>Ran 18 miles</B>
</TR>

<TR>
<TD><B>Biked 35 miles</B>
</TR>

<TR>
<TD><B>Swam 3 miles</B>
</TR>

<TR>
<TD><B>Lifted weights for 1 hour</B>
</TR>

</TABLE>
</CENTER>

</BODY>
</HTML>

```

3. Save the file as CELL\_SPANNING2.HTM in the HTML-2 folder.
4. Toggle over to your Web browser.
5. Open CELL\_SPANNING2.HTM in the HTML-2 folder.



The page is downloaded and displayed, as shown in Figure 12-7.

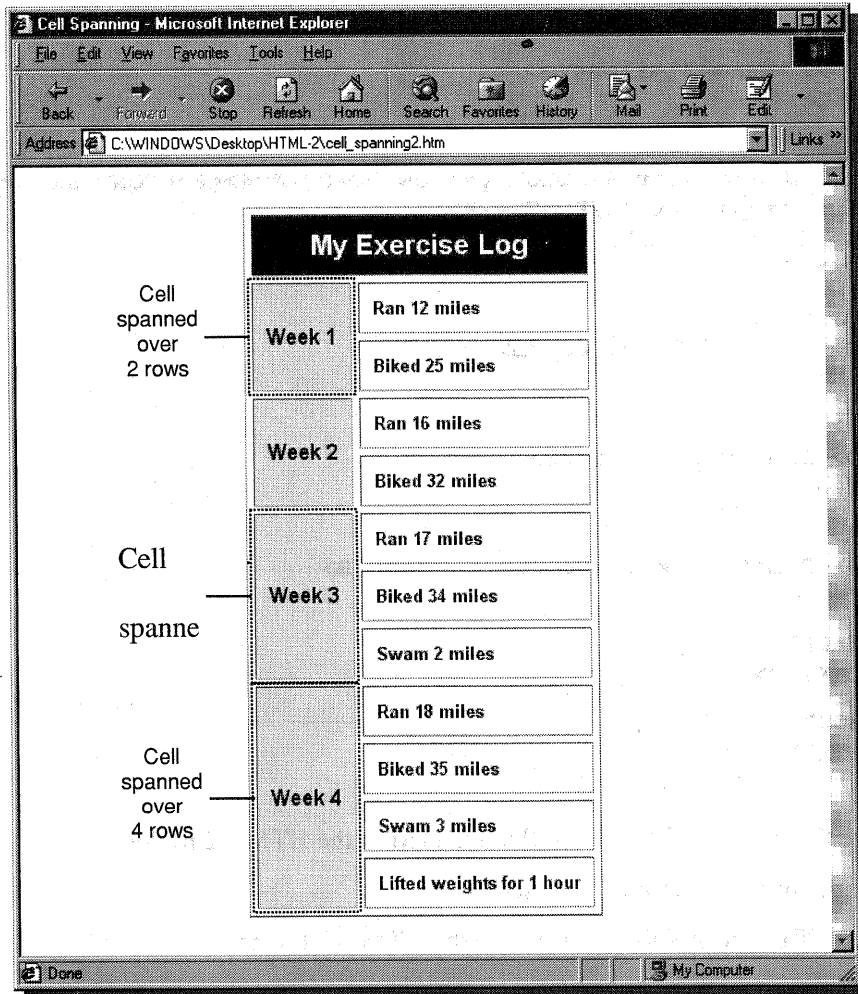


Figure 12-7: Cells spanned over rows

## Exercise 12-5: Combining Row and Column Spanning

In this exercise, you will combine both row and column spanning using both the ROWSPAN and COLSPAN attributes to the <TD> tag.

To give you a better understanding of the “position” of cells relative to the <TR> and <TD> tags that are placed in the HTML document, the cells in this exercise contain a numbering scheme. Cell 1-3 is in row 1, column 3. Likewise, cell 3-2 would appear in row 3, column 2.

1. Toggle over to Notepad. Open a new document.
2. Type the following script:

```
<HTML>

<HEAD>
<TITLE>Spanning Cells Over Both Rows & Columns</TITLE>
</HEAD>

<BODY>

<P><BR><P>

<CENTER>
<TABLE BORDER CELLPADDING=10 WIDTH=80%>

<TR ALIGN=center>
<TD COLSPAN=2 ROWSPAN=2><B>Cell 1-1</B>
<TD><B>Cell 1-3</B>
</TR>

<TR ALIGN=center>
<TD><B>Cell 2-3</B>
</TR>

<TR ALIGN=center>
<TD><B>Cell 3-1</B>
<TD><B>Cell 3-2</B>
<TD><B>Cell 3-3</B>
</TR>

</TABLE>
</CENTER>

</BODY>
</HTML>
```

3. Save the file as CELL\_SPANNING3.HTM in the HTML-2 folder.
4. Toggle over to your Web browser.
5. Open CELL\_SPANNING3.HTM from the HTML-2 folder.



The page is downloaded and displayed, as shown in Figure 12-8.

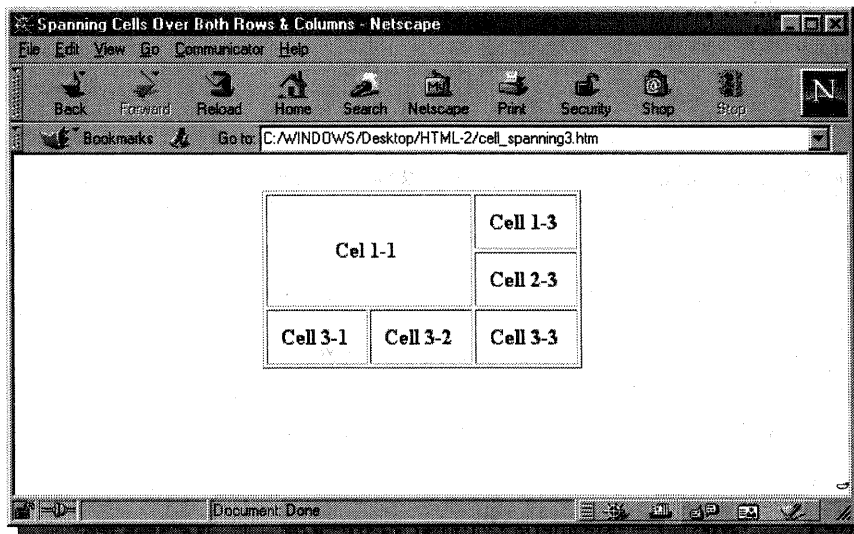


Figure 12-8: Cell spanned over two rows and two columns

## Rules & Frames

HTML 4.0 allows you to control the display of the rules and frames (border segments) of a table. With previous versions of HTML, you only had the option of a border surrounding the entire table or no border.

### Non-Cell Table Elements

Typically, a Webmaster's focus is on table cells and their contents. It is important to recognize, however, that there are, technically, three non-cell elements that compose a table:

- border (BORDER attribute)
- frames (FRAME attribute)
- rules (RULES attribute)

These elements are illustrated in Figure 12-9.

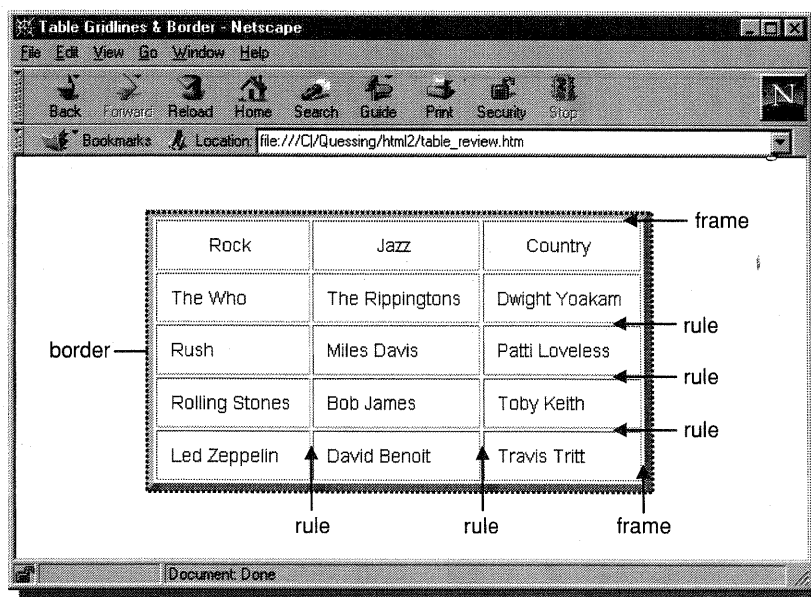


Figure 12-9: The difference between a table border and gridlines



Netscape Navigator 4.08 and older versions do not recognize the RULES and FRAME attributes.

## RULES Attribute

HTML 4.0 allows you to selectively add gridlines to a table using the RULES attribute to the <TABLE> tag. RULES has five values, as detailed in Table 12-3.

```
<TABLE RULES=none|groups|rows|cols|all>
```

With HTML 4.0 you can, for the first time, display a table with a border but no gridlines. Also, you can display only horizontal gridlines or only vertical gridlines.

RULES Attribute Value	Result
none	No rules. <i>This is the default value.</i>
rows	Rules will appear between rows only.
cols	Rules will appear between columns only.
all	Rules will appear between all rows and columns.

Table 12-3: RULES attribute values and their effects

## RULES Examples

Two common applications of the RULES attribute are the display of only horizontal (RULES=rows) or vertical (RULES=cols) rules, as shown in Figure 12-10.

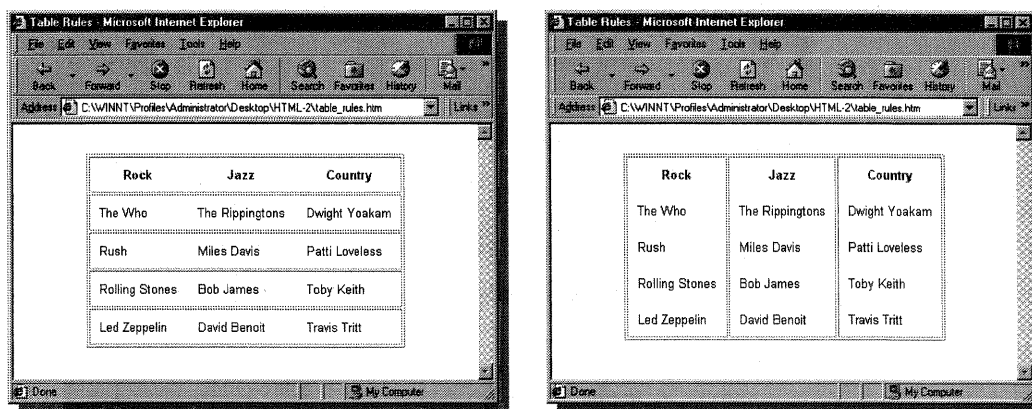


Figure 12-10: Table with RULES=rows (left) and with RULES=cols (right)



## Exercise 12-6: Using the RULES Attribute

In this exercise, you will add the `RULES` attribute to the `<TABLE>` tag and experiment with different values to create different display effects in a table. Remember that Netscape Navigator 4.08 and previous versions do not recognize the `RULES` attribute.

1. In your Web browser, open `TABLE_RULES.HTM` from the `HTML-2` folder.



The page is downloaded and displayed. The table has no border and displays no rules, as shown in Figure 12-11.

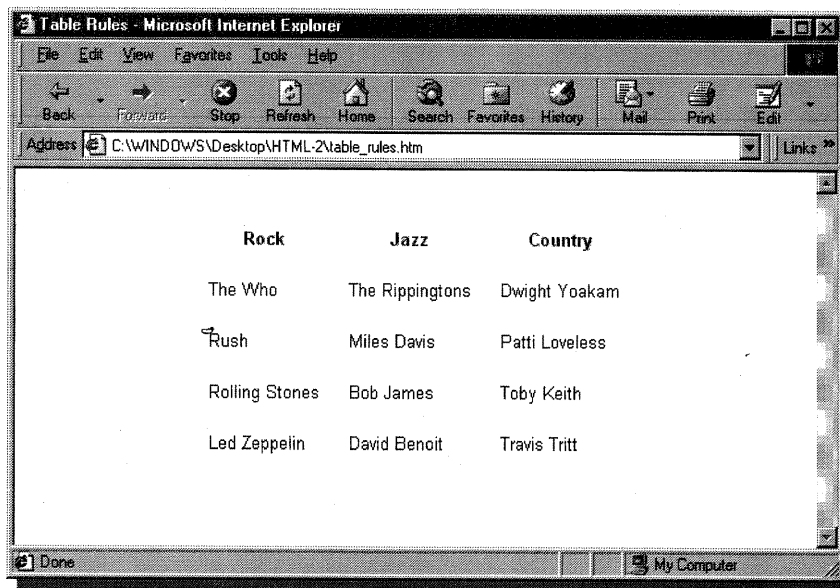


Figure 12-11: Table with no border and no rules

2. Toggle over to Notepad.
3. Open `TABLE_RULES.HTM`.
4. Add the following script that appears in bold:

```
<CENTER>
<TABLE RULES=all CELLPADDING=10>
<TR ALIGN=center>
```

5. Save the file. Toggle over to your Web browser. Reload the page.



The page is downloaded and displayed. The table has no border but displays all rules, as shown in Figure 12-12.

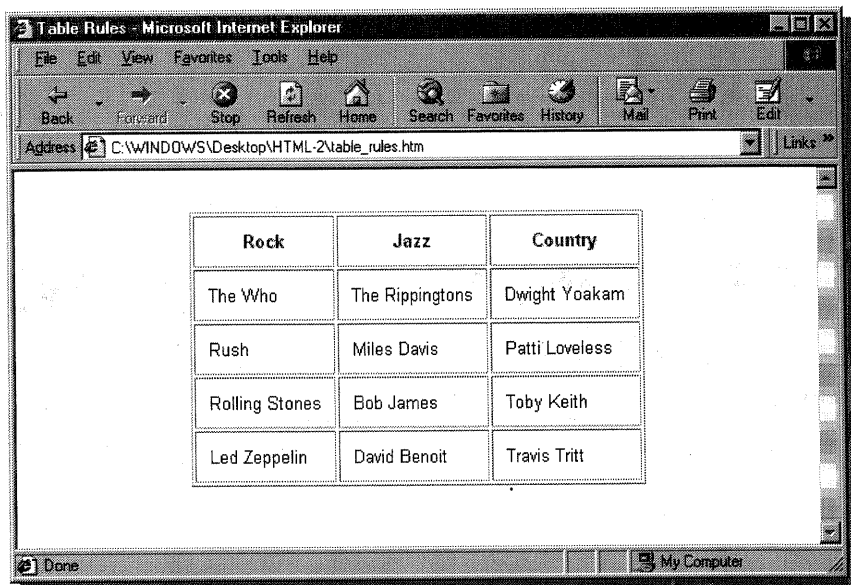


Figure 12-12: Table with no border and rules (RULES=all)

6. Toggle over to Notepad.
7. Change the following script that appears in bold:

```
<CENTER>
<TABLE RULES=rows CELLPADDING=10>
<TR ALIGN=center>
```

8. Save the file. Toggle over to your Web browser and reload the page.



The page is downloaded and displayed. The table has no border and displays rules on only rows, as shown in Figure 12-13.

The screenshot shows a Microsoft Internet Explorer window titled "Table Rules - Microsoft Internet Explorer". The address bar shows the file path "C:\WINDOWS\Desktop\HTML-2\table\_rules.htm". The table displayed has three columns: "Rock", "Jazz", and "Country". It contains four rows of data, with horizontal lines separating each row.

Rock	Jazz	Country
The Who	The Rippingtons	Dwight Yoakam
Rush	Miles Davis	Patti Loveless
Rolling Stones	Bob James	Toby Keith
Led Zeppelin	David Benoit	Travis Tritt

Figure 12-13: Table with no border and RULES=rows

9. Toggle over to Notepad:
10. Change the following script that appears in bold:

```
<CENTER>
<TABLE RULES=cols CELLPADDING=10

<TR ALIGN=center>
```

11. Save the file. Toggle over to your Web browser and reload the page.



The table is displayed with only vertical rules.

12. Toggle over to Notepad.
13. Change the following script that appears in bold:

```
<CENTER>
<TABLE BORDER RULES=none CELLPADDING=10>

<TR ALIGN=center>
```

14. Save the file. Toggle over to your Web browser and reload the page.



The page is downloaded and displayed. The table has a border but no gridlines, as shown in Figure 12-14.

This effect can be produced easier with the `FRAMES` attribute, as you will see in the next section.

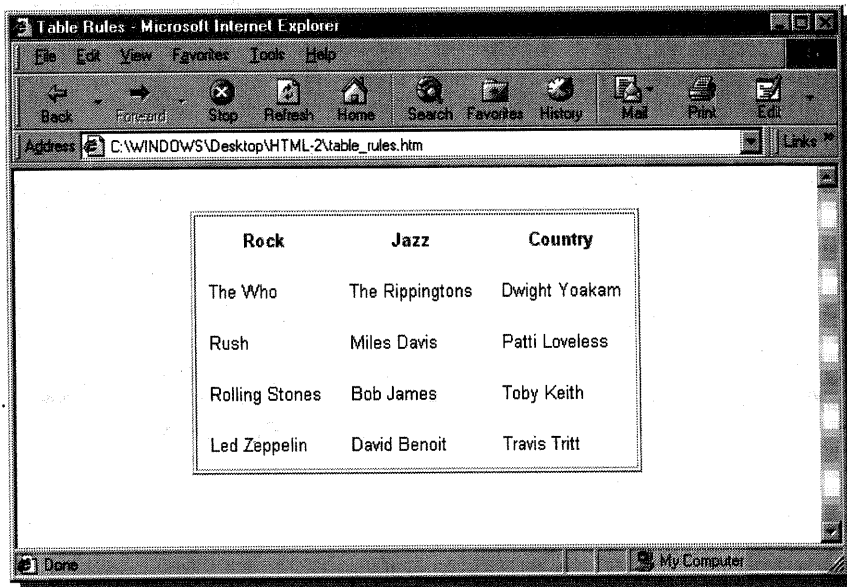


Figure 12-14: Table with a border but no rules (`RULES=none`)

## FRAME Attribute

The FRAME attribute allows you to selectively add individual border elements (table sides). FRAME has five values, as detailed in Table 12-4.

```
<TABLE FRAME=above|below|hsides|lhs|rhs|vsides|box>
```

With HTML 4.0 you can, for the first time, display a table with a border but no gridlines. Also, you can display only horizontal gridlines or only vertical gridlines.

FRAME Attribute Value	Result
above	top side only
below	bottom side only
hsides	top and bottom sides only
vsides	right and left sides only
lhs	left-hand side only
rhs	right-hand side only
box	all four sides.

Table 12-4: FRAME attribute values and their effects

## FRAME Examples

Two common applications of the FRAME attribute are the display of only horizontal (FRAME=hsides) or vertical (FRAME=vsides) rules, as shown in Figure 12-15.

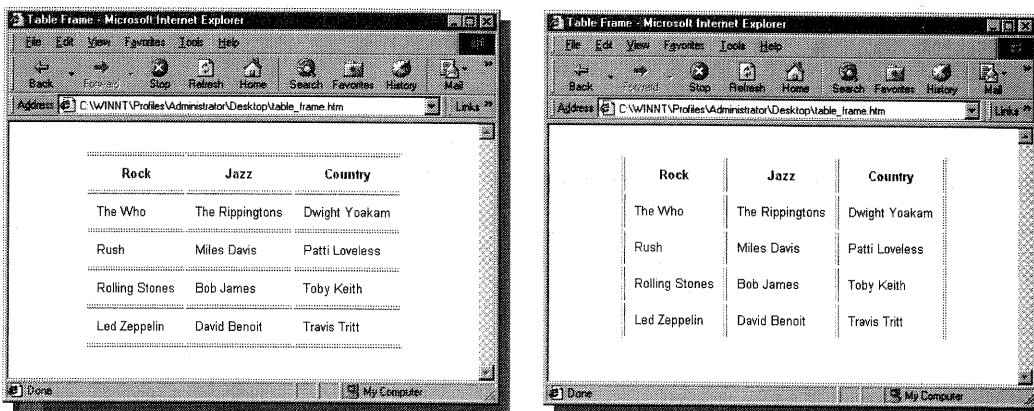


Figure 12-15: Table with FRAME=hsides (left) and table with FRAME=vsides (right)

### Exercise 12-7: Using the FRAME Attribute

In this exercise, you will add the FRAME attribute to the <TABLE> tag and experiment with different values to create different display effects in a table. Netscape Navigator 4.06 and previous versions do not recognize the FRAME attribute.

1. In your Web browser, open TABLE\_FRAMES.HTM from the HTML-2 folder.



The page is downloaded and displayed. The table has no border, rules, or frames.

2. Toggle over to Notepad.
3. Open TABLE\_FRAMES.HTM.
4. Add the following script that appears in bold:

```
<CENTER>  
<TABLE FRAME=hsides CELLPADDING=10>  
<TR ALIGN=center>
```

5. Save the file.
6. Toggle over to your Web browser.
7. Reload the page.



The page is downloaded and displayed. The table has no border but displays horizontal frames, as shown in Figure 12-16 on the following page.

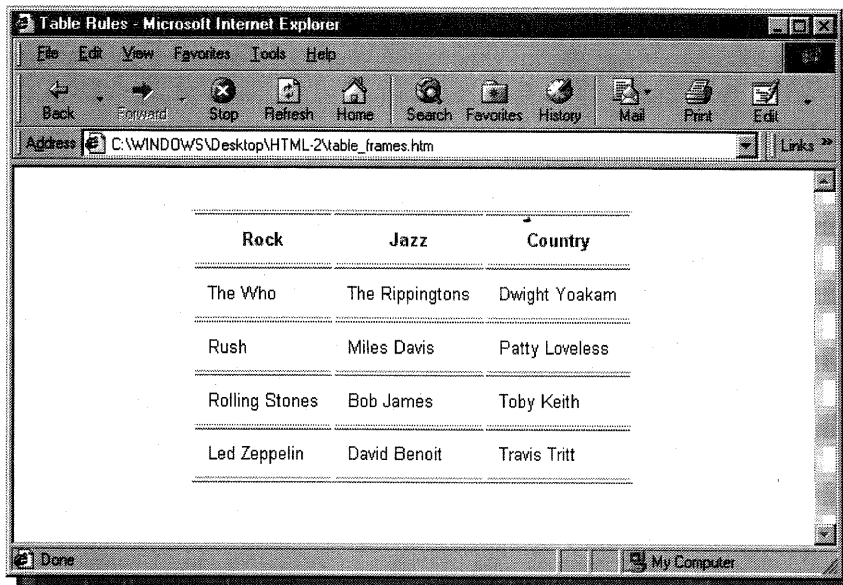


Figure 12-16: Table with no border and horizontal frames (FRAME=hsides)

8. Toggle over to Notepad.
9. Change the following script that appears in bold:

```
<CENTER>
<TABLE FRAME=vsides CELLPADDING=10>
<TR ALIGN=center>
```

10. Save the file.
11. Toggle over to your Web browser.
12. Reload the page.



The page is downloaded and displayed. The table has no border but displays vertical frames.

13. Experiment with different FRAME values as time permits. Remember that Netscape Navigator does not currently recognize the RULES or FRAME attribute.

## Lesson 12 Summary

- ▶ Advanced table formatting features include spanning cells across columns, spanning cells across rows, combining row and column spanning, and formatting cell rules and frames (collectively called gridlines).
- ▶ The default of a table is to display no border. To display a table border, you must use the `BORDER` attribute in the opening `<TABLE>` tag. A value for the `BORDER` attribute can be omitted and the border will be displayed with a default pixel width (2-4 pixels in major browsers). `BORDER` attribute values can range from 1 to 100 pixels.
- ▶ Cell spanning allows you to “stretch” a cell over multiple rows or columns. The `ROWSPAN` attribute spans a cell over multiple rows and the `COLSPAN` attribute spans a cell over multiple columns. Both attributes work with the `<TD>` tag. The value set of these attributes is simply the number of rows over which the cell should be spanned.
- ▶ Non-cell table formatting attributes are `BORDER`, `RULES`, and `FRAME`.
- ▶ Header text placed in spanned cells can greatly enhance the organization and logic of a table while also contributing to the formatting and attractiveness of the table.
- ▶ Both `COLSPAN` and `ROWSPAN` are attributes to the `<TD>` tag. Do not make the mistake of placing these attributes in the `<TR>` tag.
- ▶ Rules and frames are two formatting features of tables that are new to HTML 4.0. Rules and frames are added with the `RULES` and `FRAME` attributes, respectively, to the `<TABLE>` tag.
- ▶ Rules can be adjusted to display gridlines between rows only, between columns only, or between all rows and all columns. By specifying `<TABLE BORDER RULES=none>`, you can format a table with only an outside border and no “internal” (between cells) gridlines.
- ▶ The `FRAME` attribute has a larger value set than the `RULES` attribute. You can display frames within a table on the top side of cells only, on the bottom side of cells only, on the top and bottom sides only, on the right and left sides only, on the left-hand side only, on the right-hand side only, or on all four sides.